

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Original) A method for detecting the presence of a residual amount of corrosion inhibitor on a copper surface subjected to a cleaning solution containing a corrosion inhibitor comprising exposing said copper surface to a reactant that will attack said copper surface causing a pronounced color change of said copper surface, said color change indicating an absence of said corrosion inhibitor on said copper surface.

2. (Original) A method according to claim 1 including using a gaseous reactant.

3. (Original) A method according to claim 2 including exposing said copper surface to hydrogen sulfide gas.

4. (Original) A method according to claim 2 including introducing acetic acid into a solution of sodium sulfide in deionized water at room temperature to generate hydrogen sulfide gas as said reactant.

5. (Original) A method for determining the presence of residual corrosion inhibitor on copper surfaces or copper components of a microelectronic device having been subjected to a cleaning prior to a subsequent fabrication operation comprising:

including a sacrificial copper coupon or test piece in a group or batch of said devices during said cleaning process;

removing said test piece from said batch and exposing said test piece to a gaseous reactant selected to react with said test piece to produce a visible color change of a surface said test piece in the absence of corrosion inhibitor on said surface of said test piece.

6. (Original) A method according to claim 5 including using hydrogen sulfide as said gaseous reactant.

7. (Original) A method according to claim 6 including producing said hydrogen sulfide gas by reacting acetic acid with an aqueous solution of sodium sulfide.

8. (New) An apparatus for detecting the presence of a residual amount of corrosion inhibitor on a copper surface subjected to a cleaning solution containing a corrosion inhibitor comprising in combination:

a first receptacle adapted to receive a test piece or pieces that have been exposed to cleaning solution,

a second receptacle placed inside said first receptacle proximate and said test pieces, said second receptacle adapted to receive reactants to produce a hydrogen sulfide gas; and

means to cover said first receptacle and direct said hydrogen sulfide gas at said test piece or pieces.

9. (New) An apparatus according to claim 1 including sodium sulfide solution in said second receptacle.

10. (New) An apparatus according to claim 9 including means to introduce an acid into said second receptacle prior to covering said first receptacle.